

17. (New) A silent chain according to Claim 16, wherein the guide link pin hole diameter ϕD_g is substantially the same as the pin diameter ϕd , and the ratio of the guide link distance h_g to the link pin hole diameter ϕD_l is sufficient to permit the rotation of the link plates about the pins while preventing substantial contact between the link plate teeth and the chain guide surfaces when the chain engages the chain guide.

REMARKS

The drawings stand objected to under 37 C.F.R. §1.84(a). A proposed drawing addressing the objection is attached hereto and under separate cover. The Examiner's approval is respectfully requested.

Claims 1, 5, 6, 8 and 10 stand rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,464,374 to Mott. Applicants respectfully submit that pending claims 1, 5, 6, 8 and 10 are not anticipated by Mott.

Mott does not discuss a chain adapted to prevent excessive wear on a chain guide surface or identify the potential for excessive wear on a chain guide surface in systems employing such guides. Thus, Mott does not disclose or suggest a configuration of guide plates and links utilizing a ratio of distances of the chain guide contact surfaces and the plate/links' respective pin hole center lines to reduce such wear. Similarly, there is no discussion in Mott of the nature of the contact between chain guide surfaces and any of the guide plate or link surfaces disclosed in Mott.

Thus, Mott does not suggest the claimed guide plate/link relationship that reduces such wear by increasing the surface area contact with the links, while limiting guide plate contact, e.g. Claim 1. Mott also does not disclose utilizing the guide plate surfaces and the relationship between guide plates/links to limit the contact between link teeth disposed opposite a chain guide, e.g. Claim 6. Mott does not disclose the desirability or the need for the claimed guide plate and link plate configuration to minimize wear on a chain guide, nor does Mott suggest that such a configuration would reduce such wear by increasing the surface area contact with the chain guide between the guide plates while reducing the guide plate contact. Similarly, Mott does not suggest the placement of the pin hole apertures to achieve such reduction in the chain guide wear, e.g. Claim 12.

Claims 3, 9 and 11-13 stand rejected under 35 U.S.C. 103(a) in view of Mott and JP4046241. Applicants respectfully submit that claims 3, 9 and 11-13 are not disclosed or suggested by Mott and JP4046241. To the contrary, JP4046241 teaches away from the chain of claim 3 by disclosing slip-off preventing members that substantially contact the guide elements, as shown in its Figures 7 and 8. Furthermore, the link surfaces also are maintained in contact with the guide. Thus, there is no suggestion or motivation from this reference to provide a guide plate/link plate relationship of any of the pending claims. For the reasons discussed above, Mott also does not disclose or suggest the desirability of the claimed chains, individually or in combination with JP4046241.

With respect to claims 12 and 13, the Office Action recognizes that Mott does not disclose guide plates and link plates in contact with a chain guide. As discussed above, JP4046241 teaches away from the claimed chain. JP4046241 also discloses link plates and guide plates having apertures for receiving connecting pins in "free revolution." Rather, JP4046241 uses slip-off preventing members at the projecting ends of the pins.

Claims 4 and 7 stand rejected under 35 U.S.C. 103(a) in view of Mott and U.S. Patent No. 6,171,209 to Matsuda. Claim 7 has been canceled. Applicants respectfully submit that Matsuda does not disclose the claimed relationship between the distances from the pin hole center lines to the surfaces potentially contacting a chain guide for guide links and link plates. Thus, for the reasons discussed above Matsuda and Mott, alone or taken together, do not disclose or suggest the chain of Claim 4.

For the reasons set forth above, claims 1-13 are believed to be allowable and reconsideration and allowance of the application is respectfully requested.

The Commissioner is hereby authorized to charge any additional fees which may be required in this application to Deposit Account No. 06-1135.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The page is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE."

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES

IN THE CLAIMS:

Claims 1, 6 and 12 have been amended as follows:

1. (Once Amended) A silent chain for reducing wear on a chain guide surface, the chain comprising:

a plurality of link plates each having a pair of tooth parts and pin holes, the link plates arranged in a thickness direction as well as in a length direction, adjacent link plates rotatably linked together using linking pins;

guide links each having a pair of pin holes disposed on outermost sides of the link plates and fixed to the linking pins;

wherein a first distance from a pin hole centerline of [the] each link plate to a link plate surface facing the chain guide is greater than [the] a second distance from a pin hole centerline of [the] each guide link to a guide link surface facing the chain guide, the ratio of the first distance to the second distance effective to prevent substantial contact between the guide link surfaces and the chain guide surface when the chain engages the chain guide.

6. (Once Amended) A silent chain for reducing wear on a chain guide surface, the chain comprising:

a plurality of link plates each having at least one pair of tooth parts and a pin hole[s], ^{501A} one tooth part of each pair above and the other below a pin hole centerline, the link plates arranged in a thickness direction as well as in a length direction, adjacent link plates rotatably linked together using linking pins,

guide links disposed on outermost sides of the link plates and fixed to the linking pins,

wherein a first distance from [a] the pin hole centerline of [the] each link plate to [a] the distal surface of the tooth part [link plate surface] facing the chain guide is

less than a second distance from [a] the pin hole centerline of [the] each guide link to a guide link surface facing the chain guide, the ratio of the first distance to the second distance is effective to prevent substantial contact between the tooth part distal surfaces and the chain guide when the chain engages the chain guide.

12. (Once Amended) A silent chain having a plurality of links for reducing wear on a chain guide surface when the chain runs thereover, the chain comprising:
a plurality of guide plates having a pair of apertures therethrough for generally fixedly receiving pins to define links, the guide plates having a contact surface;
a plurality of link plates having a pair of apertures therethrough for pivotally[ably] pivotally receiving the pins to interconnect the links, the link plates having a contact surface;
the guide plate apertures and the [guide] link apertures relatively positioned to generally maintain the link contact surface in contact with the chain guide surface and the guide plate contact surface out of substantial contact with the chain guide surface to reduce wear on the contact surface.